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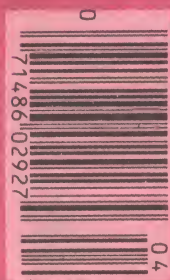
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In This Issue...

- **Integrated Software Promise & Performance**
- **9-Track Tape Drive Unlocks Vast Storehouse Of Data**
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ATARI

Applying The Atari

by Jeff Brenner

This month we've got all the exciting details on Atari's new products, which Atari expects to begin shipping to stores this month. We'll learn how last month's Alarm Clock Program works, have a look at the reader mail and take some programming tips from readers. Also, I'll list the complete version of Program Perfect.

Atari News

So, it looks as though Jack Tramiel did keep his promises. With the introduction of the 130ST and 520ST, Atari's first non-8 bit computer products, Atari has shown that it is indeed alive. Let's get a brief run-down of the new units.

The XE Line

Atari describes the XE line as the 1985 Atari XL models. Basically, the 65XE is an 800XL with an attractively redesigned case, a sculptured, high-quality keyboard, and a lower price. The PIO connector of the XL models, which was intended for future hardware expansion, is not included on the XE models. The 130XE has the same features as the 65XE, but contains 128K RAM. The 65XE and 130XE are to retail for approximately $100 and $180 respectively. Other Atari products, announced at the Winter CES in Las Vegas but not as official, are the 65XEM, a 65XE with 8-voice, music synthesizer capabilities, and the 65XEP, a portable XE with a built-in 3.5 inch disk drive and 5-inch screen.

A variety of printers were announced for the XE models, including a dot matrix impact, a letter quality daisy wheel, and a dot matrix thermal transfer printer. The impact and thermal printers offer near-letter quality print styles.

The ST Line

The ST models will no doubt put Atari in the spotlight for 1985. The big question is whether any Atari model can tackle the seemingly impervious Apple Macintosh, even if the ST proves superior and costs a fraction of the price. Also, what happens if and
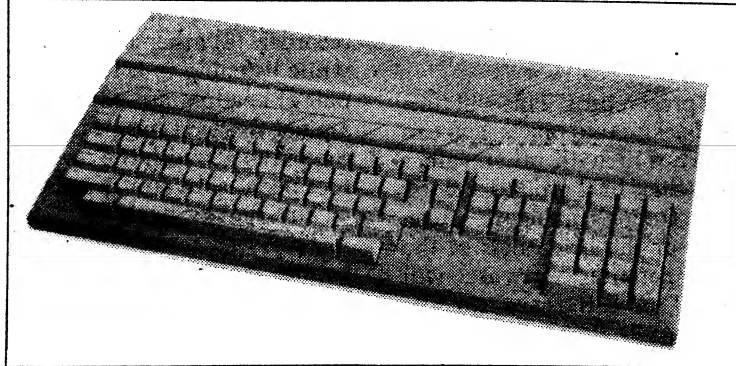
ATARI 520ST PERSONAL COMPUTER

when Commodore brings out its Macintosh-like Amiga computer? The battle is beginning all over again, folks. Whether the ST line is a success or a failure will depend largely upon the quantity and quality of software that is developed for it, as well as Jack Tramiel's marketing strategy.

The 130ST and 520ST offer 128K and 512K RAM (actually 131,072 and 524,288 bytes), respectively. The units use the same MC68000 CPU as the Macintosh, although Atari more accurately calls it a 16/32 bit microprocessor; Apple advertises the Macintosh as a 32-bit machine. The ST models use the CPM/86-k operating system and Graphics Enviroment Manager, developed by Digital Research, to give the icons, pull-down menus, windows and mouse-controlled operation that have brought the Macintosh so much acclaim. The Atari ST brings this all one step further by offering color graphics, a capability not available on the Macintosh. The three graphics modes on the ST consist of a 320-by-200 pixel, 16 color mode, a 640-by-200, four color mode, and a 640-by-400, one color mode.

Other features of the ST models include both an RS232C serial input/output port and a Centronics-type parallel port, a high-speed (1.3 megabytes/second) hard disk interface, monitor jacks for TV, RGB and monochrome, A sculptured keyboard with numeric keypad, a three-voice sound generator and a Musical Instrument Digital Interface (MIDI). Including the MIDI interface was a great idea and may make the ST models extremely practical musician's tools. Many of the newest syn-

thesizers and electronic instruments utilize the MIDI standard.

A 500K, 3.5 inch disk drive will be sold in a separate component for the ST units. A 10-megabyte, 3.5 inch hard disk drive is to be available for the ST for under $600. Utilizing the 1.3 megabytes/second data transfer rate, this drive should be incredible at the price.

Atari has talked about even another computer to be introduced in Hannover, Germany this month. This one is to have a true 32-bit microprocessor and over 1 megabyte of RAM storage (1 megabyte is 1000K). It's surely an Atari product I'm anxious to see.

Reader Mail

Are there any POKE commands which would allow older cartridges (for 400/800 series) to run on an 800XL?

John B. Neff
East Brunswick, NJ

Many older programs for the 400/800 will still run on the XL models, especially software produced by Atari. For those that are incompatible, there are no simple POKE commands to make them work on an XL, but you can get a "translator" disk. This disk gives your XL the operating system of the 400/800 and allows it to run almost all of the older software. It's available from Atari (Customer Relations, P.O. Box 61657, Sunnyvale, CA 94088, Attn: Translator Disk) for $9.95 + $2.50 postage and handling. You can also purchase one from Dynacomp (1064 Gravel Road, Webster,

65 XE PERSONAL COMPUTER

NY 14580) for $5.00 + $3.00 p. & h.

I have run into problems due to the format my writing must be in. Simply, I write scripts, i.e., screenplays. The format demands whole page action description, smaller margin dialog, and approximately centered but left-justified names. My problem is that with AtariWriter, I must continually use control codes for screen directions for action descriptions. The TAB won't work because I don't know of a way to, say, insert a few new lines of dialog later when editing. I think I need an 80-column card (to be able to see exactly where I am tabbing). Do you know where a good 80-column card for the 800XL can be got, or do you have any other suggestions, say in the area of my getting another word processor?

Fred Walters
Oklahoma City, OK

Your use of the control codes to change the printing margins is probably the best way to get the format that you need when using AtariWriter. As you realized, the tab is not appropriate for your needs since you would have to tab at the beginning of each printed line for a dialog of more than one line. During editing, there's no easy way to know where the next line will begin on a 40-column screen.

I assume that your problem is the inconvenience of constantly adding control codes for your ever-changing margins. I see no easier way of doing this with your present system. An 80-column card, by itself, is

not the answer. AtariWriter and almost all other word processors for the Atari were designed for a 40-column screen, so an 80-column card would make things worse, not better. However, an 80-column card combined with a compatible word processor might simplify your problem by making tabbing feasible, since you would be able to see exactly what will appear on paper without the tedious, scrolling preview mode of AtariWriter. One word processor that supports 80-columns that I have seen advertised recently is Atari Paper Clip from Batteries Included. It works with their Atari B.I. 80-column display adapter for XL systems. (Contact: Batteries Included, 17875 Sky Park North, Suite P, Irvine, CA 92714, 416 596-1405).

Another alternative is HomeWord from Sierra On-Line. At $69.95/disk it might be just what you are looking for. In the lower, right-hand corner of the screen, HomeWord gives you a smaller screen that shows you how the finished page will look. Each character is represented by a small graphics pixel. A flashing cursor on this mini-screen lets you see your position on the page as you type your document. Thus, it would let you see the exact position to which you are tabbing. Additionally, it gives you a preview of the printed page, as AtariWriter does, but has the advantage of giving you an 80-column display. No adapter is needed since it uses the Atari's high resolution graphics to form the

Applying The Atari
Continued From Page 55

letters. (Contact: Sierra On-Line, Inc., P.O. Box 458, Coarsegold, CA 93614.)

I'd just love to have an Atari 800XL computer. But I hesitate getting one because on every one I've seen being demonstrated, the letters on the screen are "fuzzy". They seem to look fuzzy even on a monitor. I thought maybe my eyes were going away so I had a friend check it out and he noticed that when letters are typed on the screen they are not sharp. He even went to another store, -- same story! Any idea what's going on? All the 800XLs I looked at did not have any software running. Maybe the picture is sharper with software running. I don't want to have to purchase a Commodore if possible.

M.L. McCrery
Lewiston, ID

Your problem is a most unusual one in that the Atari has always been noted for its excellent display. You should be able to tune the television to get a sharp, clear image. Or, perhaps it is the blue background. If that is the case, try typing:

POKE 710,0

and press return. This will turn the background black. You can POKE 710 with other values for other background colors. Aside from changing the screen color or the brightness of the text, running software will make no difference on the letters.

Personally, I own both Atari and Commodore systems and have always been more satisfied with my Atari's display.

If you are interested in the 800XL, I suggest at this time that you look into the newer 65XE or 130XE which should be available this month.

Programming Tips

This section contains programming hints and suggestions sent in by readers. If your tip is printed, you'll receive a three-dimensional holograph sticker.

From M. Rose (Cambridge, MA):

If you need a fast, reliable renumbering program for Atari BASIC programs, and if you own Microsoft BASIC, you can use Microsoft to renumber Atari BASIC! First, LIST your Atari BASIC program on cassette or diskette. Boot up with Microsoft and LOAD the program. Execute the RENUM command and SAVE the renumbered program back to cassette or diskette. Then, ENTER the program back in with the Atari BASIC. Microsoft will renumber all Atari BASIC statements with line numbers except for TRAP.

From Marvin Oppenheim (Monsey, NY):

In order to make it easier for me to type in program listings (especially long ones) I do the following: (1) I first dictate the entire listing into a tape recorder. (2) I then play it back while listening to it through a pair of headphones. (3) Since I am not a speed typist, I control the playback with the use of a foot pedal activator (available at any Radio Shack). This sure makes typing in listings a lot easier.

Users Groups

I received an issue of the Pokey Press, "the official newsletter" of the Atari Computer Club of the Palm Beaches (Contact: Jim Woodward, 15993 S.W. 8th Ave. B-101, Delray Beach, FL 33444, Editor: Marvin Cox). It's interesting to see what's happening in Atari users groups around the country. Many of these newsletters have been useful and important information to share with the rest of the Atari world. I'd like to receive newsletters from other Atari users groups. Send them in. I'll try to mention as many as I can in the column. Hopefully, this column can serve as a national communications link among the many Atari users groups across the country.

Alarm Clock Operation

Let's take a brief look at how last month's Alarm Clock program works. The BASIC program you entered for the Alarm Clock contains a machine language program which is placed on Page 6 of memory. Page 6 is the area which does not interfere with your BASIC program memory.

The machine language program is then set up as part of the Atari's vertical blank routine. Every 1/60th of a second, the Atari jumps to a program in its operating system which updates the color registers, increments or decrements internal counters, and performs a variety of other tasks. This program is called the vertical blank routine. The clock program is added as an extension of this routine, and thus it runs 60 times per second.

The machine language clock routine keeps track of the number of times it has been executed. When it counts to 60, the program updates a counter containing the number of seconds which have elapsed. When the second-counter reaches 60, a minute counter is incremented, and, in turn, when the minute-counter reaches 60, the hour-counter is increased. Collectively displayed, these counters tell you the time.

In addition to incrementing counters, the routine checks if the current time is the same as the time set for the alarm. If they are equal, the alarm sounds and continues to beep until it detects that the START button has been depressed.

For those interested in assembly language, an assembly listing of this routine appears under the "Alarm Clock Assembly Code" heading.
Alarm Clock Assembly Code here.

Program Perfect
For the benefit of those new to **Computer Shopper**, and to those who had difficulty in entering this program due to its listing and revision over two issues, a complete, final, never-to-be-changed listing appears under **"Program Perfect."**

Next Month
We'll have a program to liven up your Graphics 0 display, plus we'll start entering a business applications program for those who keep mailing lists. As usual, we'll cover reader mail and learn more programming tips.

Reader's questions, comments and contributions are welcome. Please enclose a self-addressed, stamped envelope for a personal reply.

A cassette or diskette of any program appearing in this column is available from the author for $5.00 per program, postpaid. Specify DOS 2 or DOS 3 when requesting a disk.

Address all correspondence to:

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"Applying the Atari"
c/o Computer Shopper
P.O. Box F
Titusville, FL 32781 ●
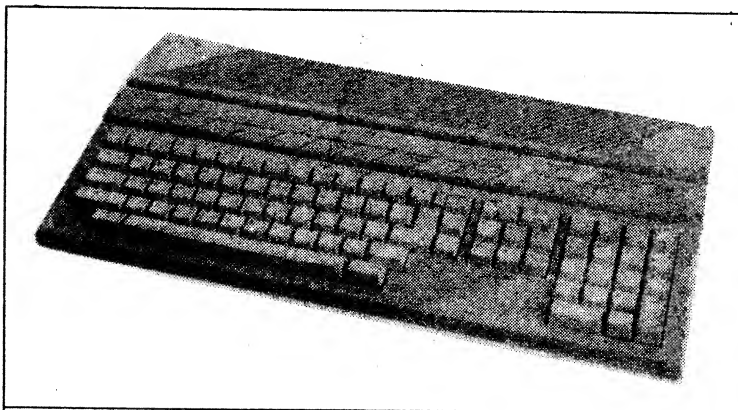
ATARI 130ST
PERSONAL COMPUTER

```
ALARM CLOCK
ASSEMBLY LISTING

10    *=$600
20    PLA
30    LDX #START/256
40    LDY #START&255
50    LDA #$07
60    JSR $E45C
70    LDA #$00
80    STA VAR3
90    RTS
0100  START SED
0110  LDX #0
0120  BACK LDA $CC,X
0130  CLC
0140  ADC #$01
0150  STA $CC,X
0160  CMP #$60
0170  BNE NONE
0180  LDA #$00
0190  STA $CC,X
0270  SKIP INX
0280  CPX #3
0290  BNE BACK
0300  LDA $CF
0310  CLC
0320  ADC #1
0330  STA $CF
0340  CMP #$13
0350  BNE NONE
0360  LDA #$01
0370  STA $CF
0380  NONE CPX #2
0381  BCC NONE2
0382  LDA $CF
0383  CMP VAR1
0384  BNE NONE2
0385  LDA $CE
0386  CMP VAR2
0387  BNE NONE2
0388  INC VAR3
0389  NONE2 CLD
0390  LDY #$12
0400  LDX #1
0410  LOOP LDA $CE,X
0420  LSR A
0430  LSR A
0440  LSR A
0450  LSR A
0460  ORA #144
0470  STA ($58),Y
0480  INY
0490  LDA $CE,X
0500  AND #$0F

0510  ORA #144
0520  STA ($58),Y
0530  INY
0540  INY
0550  DEX
0560  BPL LOOP
0570  DEY
0580  DEY
0581  DEY
0582  DEY
0590  LDA #154
0600  LDX $CC
0610  CPX #$30
0620  BCC COLON
0630  LDA #128
0640  COLON STA ($58),Y
0650  DEY
0660  DEY
0670  LDA ($58),Y
0680  CMP #144
0690  BNE NOTHING
0700  LDA #0
0710  STA ($58),Y
0720  NOTHING LDA VAR3
0730  BEQ JUMP
0740  LDA $CC
0750  CMP #$30
0760  BCC SOUND1
0770  LDA #$20
0780  STA $D200
0790  LDA #$C8
0800  STA $D201
0810  BNE JUMP
0820  SOUND1 LDA #$A0
0830  STA $D201
0840  JUMP LDA $D01F
0850  CMP #$06
0860  BNE NOPRESS
0870  LDA #0
0880  STA $D200
0890  STA $D201
0900  STA VAR3
0910  NOPRESS LDA $54
0920  BNE NOTOP
0930  LDA #$8F
0940  STA $2FC
0950  NOTOP JMP $E462
0960  VAR1 .BYTE 0
0970  VAR2 .BYTE 0
0980  VAR3 .BYTE 0
0990  .END
```

```
PROGRAM PERFECT

30000 CLR :CLOSE #1:CLOSE #2:N1=1:N2=N1+N1:N84=84:N85=N84+N1:N39=39:N65=65
30010 DIM LN$(120):OPEN #N1,9,N0,"E:":OPEN #N2,4,N0,"K:"
30020 PRINT CHR$(125):POSITION 12,N0:PRINT "▓▓▓▓▓▓▓▓▓▓":POSITION 12,N1
30030 PRINT "By Jeff Brenner":IF ST THEN PRINT :PRINT "Current line: ";ST
30040 IF  NOT ST THEN PRINT :PRINT "Starting line: ";:INPUT #16;ST
30050 POSITION N39,5:? " ":POSITION N39,6:? " ":POSITION N39,7:? " "
30060 POSITION N2,5:PRINT "--- ";ST;:POKE N85,N2:PRINT "-";CHR$(30);:FOR I=N1 TO 3
30070 POKE 702,64:POKE 694,0:GET #N2,N:IF N=126 AND I:N1 THEN PRINT CHR$(30);"-";CHR$(30);:I=I-N
1:GOTO 30070
30080 IF N<N65 OR N>N98 THEN GOSUB 30310:GOTO 30070
30090 PRINT CHR$(N);:NEXT I:SP=LEN(STR$(ST))
30100 FOR I=N1 TO SP+N2:? CHR$(31);:NEXT I:Y=PEEK(N84):X=PEEK(N85):ES=N0
30110 GET #N2,N:IF N=155 THEN PRINT N2,5:INPUT #N1;LN$:GOTO 30200
30120 IF N=156 OR N=157 THEN 30110
30130 IF ES THEN 30160
30140 IF (N=29 AND PEEK(N84)=Y+N2) OR (N=28 AND PEEK(N84)=Y) THEN 30110
30150 IF N=125 THEN 30020
30160 PRINT CHR$(N);:ES=N0:IF PEEK(N84)>Y+N2 THEN 30190
30170 IF PEEK(N84)=5 AND PEEK(N85)=SP+6 THEN SOUND 30060
30180 GOTO 30110
30190 GOSUB 30310:POKE N85,N39:POKE N84,Y+N2:PRINT CHR$(28);CHR$(29);:GOTO 30110
30200 POSITION N39,10:? " ":POSITION N39,11:? " ":POSITION N39,12:? " "
30210 T2=26*(ASC(LN$(N1,N1))-N65)+ASC(LN$(N2,N2))-N65+N0:NL=ASC(LN$(3,3))-N65+N1
30220 POSITION N2,10:PRINT CHR$(156):LN$(5,LEN(LN$)):PRINT :PRINT :PRINT CHR$(157);"CONT"
30230 POSITION N2,8:POKE 842,13:STOP
30240 POKE 842,12:POSITION N2,10:PRINT CHR$(156)::POSITION N2,9:LIST ST
30250 T=NL:POSITION N2,10:INPUT #N1;LN$:FOR I=N1 TO LEN(LN$):T=T+ASC(LN$(I,I))
30260 IF T>650 THEN T=T-650
30270 NEXT I:IF T=T2 AND NL<26 THEN ST=ST+NL:GOTO 30020
30280 IF T=T2 AND NL=26 THEN 30320
30290 POSITION N2,9:FOR I=N1 TO 5:PRINT CHR$(156)::NEXT I
30300 PRINT :PRINT "ERROR -- TRY AGAIN":GOSUB 30310:GOTO 30060
30310 SOUND N0,N85,12,8:IF N1*N1 THEN SOUND N0,N0,N0,N0:RETURN
30320 PRINT CHR$(125):"END OF PROGRAM --"
30330 FOR I=30000 TO 30320 STEP 2.4:PRINT I:PRINT "CONT"
30340 POSITION 2,2:POKE 842,13:STOP
30350 NEXT I:PRINT CHR$(125):FOR I=30300 TO 30330 STEP 10:PRINT I:NEXT I
30360 LN$="PROGRAM ENTRY COMPLETED.":PRINT "POKE 842,12:PRINT CHR$(125);LN$
30370 POSITION 2,0:POKE 842,13:STOP
```

Digital Research's GEM Operating Environment Debuts On Atari

Digital Research Inc. announced at the Consumer Electronics Show (CES) here recently that it has signed the first in a series of agreements with microcomputer manufacturers licensing its GEM (graphics environment manager) operating system extension and GEM desktop application.

Atari Corp., is the first original equipment manufacturer (OEM) whose personal computers will take advantage of GEM software's capabilities to provide a user interface like that of the popular Macintosh computer. Beginning in the first quarter of 1985, GEM software will be available on the ST line of Atari personal computers product line of business personal computers.

GEM software eliminates cryptic operating system commands by presenting the user with a pictorial representation of a desk's surface. Familiar icons of disks and a wastebasket appear on the desktop, while folders and documents appear in user-controlled windows. Simply by moving the mouse and clicking its button, the user can open a file, run a software program, delete a file, or do anything else allowed by the operating system.

"Because the GEM graphics-oriented user interface is easy to learn and use, these OEM agreements will make powerful personal computers accessible to a large number of consumer and business users," said John Rowley, president of Digital Research. "By 1986, we expect that GEM will be in use on more than a million machines."

GEM Interface On New Atari Line

The entire family of Atari ST personal computers, based on the Motorola 68000 microprocessor, will employ GEM software. The first members, announced here, are the Atari 130 ST and 520 ST. They use a proprietary operating system developed jointly by Atari and Digital Research.

Said Sam Tramiel, president of Atari, "We chose the GEM interface because it represents the most advanced microcomputer technology for consumers to learn and use personal computers. It will help place Atari in a position to offer a powerful, easy-to-use personal computer at a low cost."

Apricot Computers To Incorporate GEM

Britain's ACT and its U.S. marketing and distribution affiliate, Apricot Inc., will use GEM software worldwide on MS DOS-based business microcomputers to give them "cut-and-paste" facilities, complete graphics device and mouse support, windowing capabilities, icons and pull-down menus.

Existing MS DOS application programs not adapted to take advantage of the GEM software interface capabilities can still run unmodified on Apricot machine.

The entire Apricot product line will use GEM software, including the 512K Apricot F1s, the Apricot PC floppy disk, Apricot XI, the Apricot Por-

Assembly Language
Continued from page 154

what it was you were trying to tell it to do.

Naturally, if you have error messages, the program is *guaranteed* not to run. If you have a success message, the program probably will *still* not run, or at least not on your first dozen tries.

For a successful program, you must first enter and use legal commands in a legal way in EDASM. After that, the object code that EDASM generates also must do legal things in an expected way for your program to work.

That just about completes our sixteen steps of a structured assembly language listing. The first of the ripoff modules is called EMPTY SHELL.SOURCE, and appears later. This one is sort of like a Christmas tree you can hang all your ornaments on, and greatly simplifies organizing an structuring your source code. Since it is usually easier to edit a source code than create one, you might like to start with the empty shell and adapt it to your particular needs. Much more on this later.

For now, though, it looks like we are almost ready to actually enter and edit some source code. ●

Digital Research
Continued from page 156

table and the Apricot F1 and F1s microcomputers.
Agreements With Independent Software Vendors

In order to ensure the success of GEM software, Digital Research has entered into agreements with a number of independent software vendors to provide GEM application software that will run on any MS DOS machine. In addition, software written to the operating system extension can be easily recompiled for the Atari ST personal computers. Thorn EMI/Perfect Software, Chang Labs, Lifetree Software and Matrix have all agreed to write GEM software that takes advantage of the graphic interface.

Digital Research Inc. provides system software and software-related products for the full spectrum of microcomputers in business, professional and commercial markets. ●